Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim Listing

What is claimed is:

1.   (currently amended)A model system for simulating the performance of a subterranean well, comprising:

      a.   a base model;

      b.   an input device for inputting well logging data into the base model;

      c.   an input device for inputting pressure transient data into the base model;

      d.   an input device for inputting PVT data into the base model;

      d̶e.   a numerical interpreter for calculating predicted performance of the well;

      e̶f.   a match system for comparing actual performance data with calculated predicted performance data based on the base model; and

      f̶g.   a reiterative loop for modifying the base model to provide a match between the actual performance data and t̶h̶e̶ predicted performance data to optimize the base model.

2.   (original)The model system of claim 1, further including a data editing module for editing the pressure transient data before it is input into the base model.

3.   (original)The model system of claim 1, further including a plotting device for plotting the data generated by the system.

4.   (original)The model system of claim 3, wherein the plotting device is adapted for plotting line fitting on specialized plots.

5.   (original)The model system of claim 3, wherein the plotting device is adapted for plotting

specialized plots providing preliminary estimates of performance data based on the base model.

6.   (original)The model system of claim 3, wherein the plotting device is adapted for generating a 3D display of the well.

7.   (original)The model system of claim 3, wherein the plotting device is adapted for generating performance data plots based on the optimized model.

8.   (currently amended)A method for generating optimized performance data in a subterranean well, comprising the steps of:

      a.   introducing known pressure transient data, well logging data and PVT data for the well into a base model;

      b.   producing a performance prediction from the base model;

      c.   comparing the performance prediction with actual performance; and

      d.   modifying the model to generate a performance prediction that matches the actual performance for producing an optimized model.

9.   (currently amended)The method of claim 8, wherein the PVT data includes non-Darcy factors effecting the fluid parameters in the well.

10.   (currently amended)The method of claim 8, wherein the optimized model is generated by comparing the performance prediction and the actual performance data for a first, known zone and wherein the optimized model may then beis utilized to predict performance data for an unknown zone.

11.   (currently amended)The method of claim 10, wherein the model ismay be repeatedly optimized as actual performance data for multiple zones is collected.